

## YSI Environmental



# YSI's most Reliable Oxygen Sensor to date: ROX

The next generation YSI ROX is a luminescent-based dissolved oxygen sensor that offers YSI customers the most powerful tool for making long-term oxygen

measurements in severe fouling and low oxygen environments. Its rugged design and large measurement range make it ideal for sampling, flow cell and groundwater measurements.

NEV

• Utilizes luminescence lifetime detection of oxygen to provide the most stable measurements possible

• Microprocessor-controlled measurement system reduces drift and improves accuracy

• Easy to replace, durable membrane with a usable life of one year

• Fully compatible with all YSI 6-Series sondes equipped with optical ports—with a free and easy firmware upgrade from ysi.com

- Easy one or two point calibration:
  - -One-point saturation
  - -Two-point for a zero calibration point and saturation
- Integrated wiping system providing anti-fouling in the most hostile environments and featuring:
  - -New switch controlled wiper parking system

-Non-corroding titanium wiper shaft for long-life in hydrogen sulfide  $(H_2S)$  and low oxygen environments

- -Service-Center-replaceable wiper shaft seal for longer sensor life
- Widest detection range of any optical dissolved oxygen sensor for easy correlation with YSI Rapid Pulse™ legacy data

YSI understands the challenges facing scientists and technicians in the field today. Many of our employee-owners spend time working along side our customers in the field and have experienced first hand what works well and what doesn't. The lessons we have learned have been applied to the design of the new ROX sensor.

### **ROX Quality Control and Quality Assurance**

Improving on YSI's commitment to supplying our customers with relevant calibration and QA/QC data, each ROX sensor is shipped with full-range factory calibration coefficients to ensure excellent sensor accuracy.

The ROX Reliable Oxygen Sensor





To order, or for more information, contact YSI Environmental.

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# prolonging deployment times.

The ROX sensing system is based on the luminescence lifetime method. This method was chosen because it offers the most stable, repeatable and sensitive method for oxygen detection, thus reducing sensor drift and

Excitation light triggers luminescence in the sensing element Figure 1: The sensor emits blue light, which causes the sensing element to glow (luminesce) red light . In the presence of oxygen, the luminescence changes and the sensor measures that

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Methodology

change, which is proportional to the oxygen concentration. The luminescence signal from the blue light is compared to that of the red light (figure 2) and a stable dissolved oxygen concentration is then calculated.



reflected by the sensing element. The reflected red light is measured by the sensor and serves as a reference for the lifetime luminescence calculations.

## ROX Reliable Oxygen Sensor Specifications (Item # 6150)

ta		Range	Resolution	Accuracy
	Optical Dissolved Oxygen <sup>•</sup> % Saturation	0 to 500%	0.1%	0 to 200%: ±1% of reading or 1% air saturation, whichever is greater; 200 to 500%: ±15% of reading
	Optical Dissolved Oxygen* mg/L	0 to 50 mg/L	0.01 mg/L	0 to 20 mg/L: ± 0.1 mg/L or 1% of reading, whichever is greater; 20 to 50 mg/L: ±15% of reading

Maximum depth rating for all optical probes is 200 feet, 60.96 m.

The ROX membrane differs from the traditional electrochemical sensor membrane, requiring fewer steps for installation and less maintenance. ROX membranes will last for one year and are made of a durable material that is unlikely to be damaged in the field. The ROX sensor eliminates stirring dependency that was required of most traditional polarographic sensors.

# Rapid Pulse<sup>™</sup> vs. ROX

YSI's ROX sensor has several advantages over the Rapid Pulse DO sensor including:

- Zero flow dependence
- Mainenance-free and puncture-proof membrane
- No electrolyte
- Self-cleaning for longer deployments
- Insensitive to H<sub>2</sub>S
- Zero-cal option